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RESEARCH ARTICLE

Global Imbalances: Is Germany the New China? A Skeptical View

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Abstract In this paper we evaluate the current account patterns of China and Germany. We point out that China's current account surplus as a share of global GDP in recent years resembles that of Germany's. Yet, an important difference is that the Euro block's current account inclusive of Germany has overall been balanced, whereas emerging Asia's current account inclusive of China has mostly been characterized by sizable surpluses. We further find that both China and Germany's current account surpluses seem to be accounted for by common factors. However we have reasons to doubt the long run viability of these current account trends in future decades. Demographic transitions in China and Germany are projected to reduce their surpluses, and this effect is stronger for Germany. We also discuss plausible reasons to doubt the extent to which the Euro block will move towards significant surplus in the coming years.

Keywords Current accounts · Demographic transitions · Global imbalances

JEL Classification F15 · F32

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“Let me introduce you to Chermany, a composite of the world’s biggest net exporters: China, with a forecast current account surplus of \$291bn this year and Germany, with a forecast surplus of \$187bn. ... Both also believe that their customers should keep buying, but stop irresponsible borrowing. Since their surpluses entail others’ deficits, this position is incoherent. Surplus countries have to finance those in deficit. If the stock of debt becomes too big, the debtors will default. If so, the vaunted “savings” of surplus countries will prove to have been illusory: vendor finance becomes, after the fact, open export subsidies.”

Martin Wolf, “China and Germany Unite to Impose Global Deflation”
Financial Times, March 16, 2010.

The great recession has brought into focus the sizable current account surpluses of China and Germany, leading some observers to align the two into a unified block sharing similar agenda. At times of low unemployment in the OECD countries (as has been the case during the Great Moderation), observers viewed current account imbalances as win-win arrangements, promoting the export led growth of China and reducing the cost of funding the deficits of the US [see Dooley et al. (2003)]. During the Great Recession, observers occasionally link the current account surpluses of China and Germany as a growing challenge for other OECD countries.¹ The purpose of our note is to evaluate the current account patterns of China and Germany in context of the global imbalances, and to discuss the future prospects of the continuation of these surpluses. We start by reviewing the current account patterns of these two countries during the last 30 years. Thereafter, we evaluate their current account patterns in context of regional and global imbalances. We then conduct an empirical analysis of the possibility that common global and domestic factors account for the current account patterns of both countries, and finally conclude with an assessment of future trends.

From a quick inspection of the data, China seems to be the new Germany rather than the other way round. Indeed, Germany has been running significant current account surpluses during most of the 1980s, reaching 5% of its GDP in the mid 1980s, at a time when China experienced current account deficits, reaching -4% of its GDP in the mid 1980s [see Fig. 1]. Germany’s current account moved towards a balanced position during the 1990s, possibly reflecting the fiscal challenges associated with unification with East Germany. On the other hand China’s current account stance changed from closed to being balanced (in the first half of the 1990s), to surpluses ranging between 2% and 4% of its GDP, during the second half of the 1990s. Intriguingly in the 2000s, the patterns of the current accounts of China and Germany became highly correlated, moving in tandem, from about 2% to nearly 10% of their respective GDPs in 2006, and dropping to 6% of their GDPs in 2008.

¹ To exemplify, in *Dealing With Chermany*, Krugman articulated “So here’s where we are: China has done nothing to change its policy of massive currency manipulation, and its exports are surging. Meanwhile, Europe is going wild for fiscal austerity. Angela Merkel says that budget cuts will make Germany more competitive—but competitive against whom, exactly? ...everyone is counting on the US to become the consumer of last resort, sucking in imports thanks to a weak euro and a manipulated renminbi.” New York Times blog (June 11, 2010).

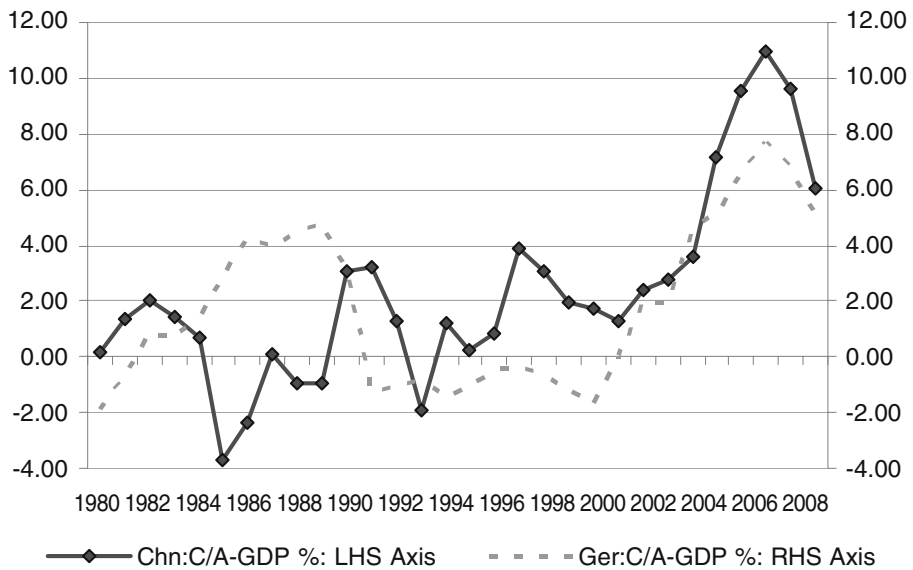


Fig. 1 Current account to GDP ratios of China and Germany

Figure 3 suggests that an obvious common external factor was ‘accounting’ for the current account patterns of *Chermany*: the US current account deficit.²

Figure 1, focusing on the current account to GDP ratio, overlooks the fact that size matters. Small countries play a minor role in global imbalances, independent of their current account to GDP ratios [see Aizenman and Sun (2010)]. The big story of the last 30 years has been the sustainable, high growth rate of the Chinese economy. From a small economy close to autarky in 1980, China has now become a major trader of goods and services, and a key player in the context of global imbalances. This is vividly illustrated by tracing the current account patterns of China and Germany in USD billions, in Figs. 2 and 3. It is worthwhile to note here that until 1994, the contribution of China to global imbalances was practically nil. China’s current account surplus accelerated from 2000s onwards, surpassing that of Germany in 2007, thereby confirming the point that, if at all, China is the new Germany. The remarkable acceleration of current account surpluses of China took place at a time when trade openness of China, which was about one-third of Germany in the early 1980s, reached that of Germany in 2000s [see Figs. 4 and 5].³

A look at the regional patterns reveals an obvious difference between Germany and China. Germany has been the anchor of exchange rate of the core of Western Europe before and after the formation of the Euro. Figure 3 shows that during the last 30 years the average current account of the Euro block was close to a balanced

² Over the last decade (2000–2009) the correlation coefficients between US current account and the current accounts of China and Germany were, -0.42 and -0.81 respectively.

³ The correlation coefficients between the current accounts (in USD) of China and Germany between 1980 and 1994 and 1995 and 2009 were, -0.29 and 0.93 respectively. Furthermore, the correlation coefficients between current accounts (in USD) of China and USA between 1980 and 1994 and 1995 and 2009 were, 0.48 and -0.61 respectively. The correlation coefficients between current accounts (in USD) of Germany and USA between 1980 and 1994 and 1995 and 2009 were, -0.57 and -0.81 respectively.

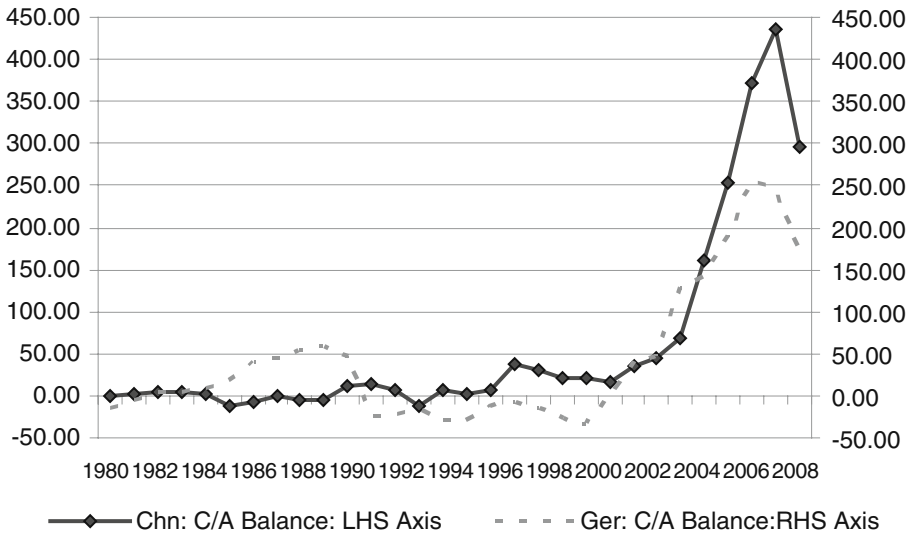


Fig. 2 Current account balance in USD billions of China and Germany

position. Thus, as long as the Euro block is viable, and its current account is closed to being balanced, concerns about the German current account surpluses happen to be more of an European issue, rather than a global imbalances issue. It is fair to say that Europe has been quite a neutral block in terms of its net contribution to global imbalances, and most of the balancing of the current account deficits of the US during the 2000s was done by East Asia and the oil and commodity exporting countries. The easy financing of US fiscal and current account deficits, and the

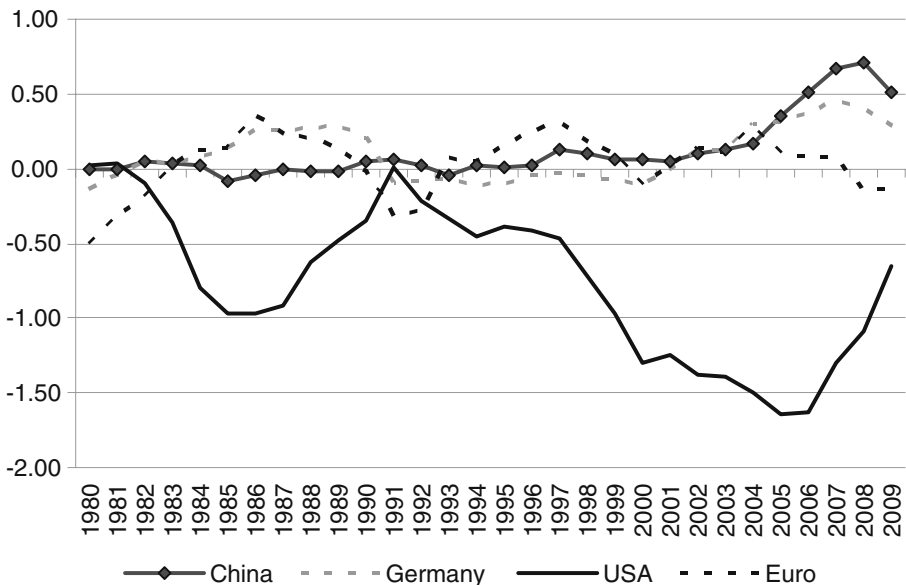


Fig. 3 Countries' current account balance as percentage of World GDP

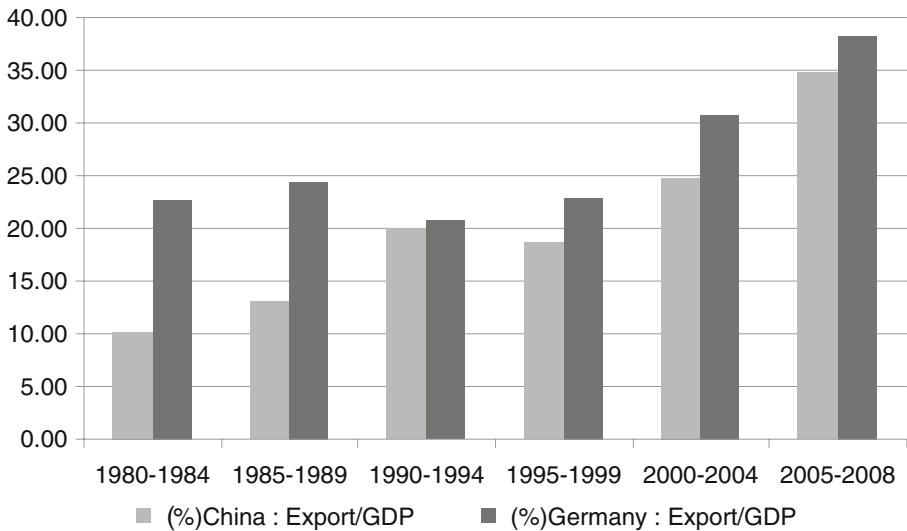


Fig. 4 Ratio of exports to GDP of China and Germany

absence of pro-active leverage regulations contributed to the real estate and asset appreciations in the US. Ironically, Germany seems to play the role of China within the Euro block, *de facto* financing deficits of other euro-block members, probably magnifying the credit boom in Europe.

Arguably, in the short-intermediate run, the choices of the exchange rate regime and the degree of financial integration affect patterns of current account and the speed of adjustment of current account imbalances. During 1950s–1960s, prior to the formation of the Euro, sustaining the *de facto* fixed exchange rate in the core of Western Europe benefited from the limited financial integration. The growing fiscal

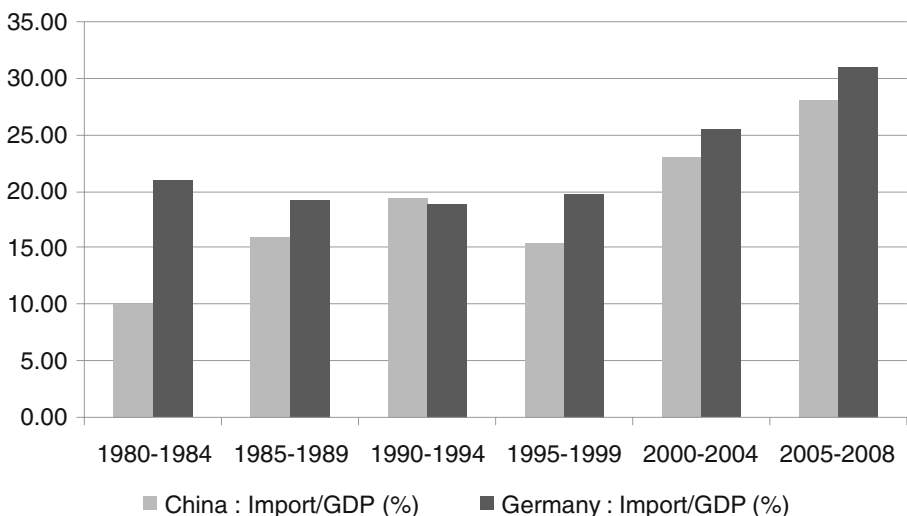


Fig. 5 Ratio of imports to GDP of China and Germany

harmonization in the years leading to the Euro, the credibility of the macro policies implemented by the core of Western Europe, and the optimism regarding the Euro project during the Great Moderation induced under pricing of sovereign debt of non-core Euro zone countries at times of deeper financial integration [see Giavazzi and Spaventa (2010) and the references therein]. The growing current account surpluses of Germany in 2000–2007, and the presumption that the core of the Euro zone would help in times of need, facilitated cheaper funding of current account deficits of non-core Euro zone countries. The net outcome has been rapid increase in cheap credit, magnification of the appreciation of real estate and other assets in several European countries [including Ireland and Spain],⁴ and consumption boom [including Greece and Portugal]. These dynamics are consistent with the *Austrian View* of financial crises [see Bordo and Wheelock (2004) and Dellas and Tavlas (2010)]. When monetary policy passively allows bank credit to expand, financial imbalances (possibly magnified by current-account deficits in the open economy), fuel the appreciation of assets, increasing the odds of a financial crisis down the road.

In contrast, China maintains stringent capital controls, and has been *de facto* part of the dollar block—a block that seems to be characterized during the 2000s by sizable current account surpluses of China, moving in tandem (but in opposite direction) with the current account of the US. China's limited financial integration and financial repression enhanced its ability to sustain an overall stable yuan/dollar rate at times of growing current accounts surpluses. These surpluses have been absorbed by accelerating hoarding of international reserves, and massive sterilization. Capital controls and the financial repression in China imply that the costs of sterilization in China have been lower than they would have been otherwise, leading observers to regard the induced undervaluation of the yuan as a factor contributing to the Chinese export performance.⁵ These patterns were dubbed by Dooley et al. (2003) as Bretton Woods II.

1 Data Analysis

Against this background, we evaluate the patterns of the current account to GDP ratios of China and Germany, as a function of lagged conditional variables in a panel analysis, for 1970–2009 [see Tables 1 and 2]. The relatively short duration of our sample constrains our approach, and hence we sequentially add lagged conditioning variables to a bivariate regression. The set of controlling variables is mostly from

⁴ Pre 2008–09 data supports the notion that current account deficit, controlling for other relevant factors, was the most important conditioning variable accounting for real estate appreciation (Aizenman and Jinjark (2009)).

⁵ In the 2004 Jacobsson Lecture, Summers articulated “A substantial number of countries are maintaining a fixed or quasi-fixed exchange rate through very substantial exchange rate intervention and enjoying strong export performance to the United States as a result.” Note that the ultimate current account surplus is explained by the saving minus investment of a country [or its export minus imports], and can be accounted by multitude of factors. The relative weakness of the Yuan reduces the real income of Chinese labor, and thereby their imports. Furthermore, the shallowness of the safety net in China implies that rising income uncertainty and declines in the pension replacement ratios explain the high private saving rate in China [see Chamon et al. (2010)].

Table 1 Estimation of Germany's current account/GDP

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lagged net foreign assets/GDP	0.11*** -0.03	0.04 -0.03	0.04 -0.03	0.04 -0.03	0.11** -0.05	0.02 -0.03	-0.00 -0.04	0.04 -0.03	-0.02 -0.03
Lagged US current account/GDP		-0.67*** -0.20	-0.68*** -0.19	-0.88*** -0.28	-0.67*** -0.20	-1.61*** -0.20	-0.57*** -0.20	-0.67*** -0.20	-0.43*** -0.15
Lagged world growth rate		0.10** -0.04	0.11** -0.05	0.08 -0.05	0.10** -0.04	-0.03 -0.05	0.11** -0.05	0.11** -0.04	0.02 -0.04
Lagged govt. budget balance/GDP			-0.06 -0.19						
Lagged dependency ratio (Young)				0.11 -0.08					
Lagged dependency ratio (Old)					-0.46* -0.24				
Lagged domestic credit/GDP						-0.09*** -0.01			
Lagged trade openness							0.11* -0.06		
Lagged GDP growth rate								-0.06 -0.17	
Lagged current account/GDP									0.73*** -0.14
Constant	-0.42 -0.50	-1.46*** -0.49	-1.61** -0.77	-4.37* -2.16	8.45 -5.12	7.28*** -1.42	-5.90** -2.41	-1.34** -0.59	-0.21 -0.47
Observations	39	38	38	38	38	38	38	38	38
R-squared	0.44	0.59	0.59	0.60	0.63	0.80	0.62	0.59	0.77

The dependent variable is current account balance scaled by GDP of Germany. The table shows time-series estimation results from ordinary least squares regression over the period from 1970 to 2009, using lagged, annual values of all explanatory variables. Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively

Table 2 Estimation of China's current account/GDP

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lagged US current account/GDP	-1.01***	0.41							
	-0.25	-0.34							
Lagged world growth rate	0.04	0.06							
	-0.07	-0.04							
Lagged net foreign assets/GDP		0.22***	0.18***	0.21***	0.22***	0.21***	0.15***	0.19***	0.11***
		-0.05	-0.02	-0.06	-0.04	-0.05	-0.05	-0.03	-0.03
Lagged govt. budget balance/GDP			0.23						
			-0.20						
Lagged dependency ratio (Young)				-0.39					
				-0.80					
Lagged dependency ratio (Old)					0.08				
					-0.05				
Lagged domestic credit/GDP						-0.01			
						-0.02			
Lagged trade openness							0.04		
							-0.06		
Lagged GDP growth rate								-0.32***	
								-0.10	
Lagged current account/GDP									0.42***
									-0.15
Constant	-0.39	-0.62	-0.15	2.47	-5.10*	0.32	-1.64	2.39**	-0.30
	-0.80	-0.70	-0.68	-6.50	-2.95	-1.13	-1.41	-0.91	-0.44
Observations	38	32	32	32	32	32	29	32	32
R-squared	0.38	0.75	0.74	0.74	0.75	0.74	0.73	0.80	0.77

Given the relatively high correlation between China's NFA and US current account deficit (-0.8), we exclude US current account as well as world growth rate from column (3) onwards i.e. when China's lagged NFA to GDP ratio is incorporated.

The dependent variable is current account balance scaled by GDP of China. The table shows time-series estimation results from ordinary least squares regression over the period from 1970 to 2009, using lagged, annual values of all explanatory variables. Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively

Chinn and Prasad (2003) and Gruber and Kamin (2007). See the [Appendix](#) for data sources. To avoid correlation with the dependent variable, we lag the conditioning variables. The controls are:

- The US current account, reflecting the possible impact of the US as the demander of last resort. Larger US current account deficits are expected to be associated with a more positive current account balance of other countries.

- World and domestic GDP growth rates. An increase in the growth rate relative to other countries should be associated with a more negative current account balance, as it tends to be correlated with higher return on capital, increase in investment and the potential for higher future income, and decreases savings.
- Country's net foreign asset position (NFA), expressed as a ratio to GDP. Higher Country's NFA position increases its net investment income, and therefore tends to improve its current account balance.
- Government budget balance. Higher fiscal surplus (or lower fiscal deficit) tends to improve current account balance.
- Demographic factors (old and young dependency ratios). To recall, the life-cycle theory of consumption and saving implies that young households borrow, middle-age households save for retirement, and households in retirement dis-save. Therefore relatively young and relatively old countries are more likely to run current account deficits [see Obstfeld and Rogoff (1996, Chapter 3)]. These effects may be captured empirically by controlling for youth dependency ratio (the ratio of the population ages 0–14 to the working age population, ages 15–64), and old-age dependency ratio (the ratio of the population 65 and older to the working age population).
- Domestic credit to GDP ratio (to proxy for domestic financial depth), and trade openness. Lack of financial development and lack of trade openness limit investment opportunities and hence encourage capital outflows [see Prasad et al. (2006) and Chinn and Prasad (2003)].

We also estimate the current account patterns of China and Germany by applying the Seemingly Unrelated Regression [SUR] Model, for 1970–2009 [see Table 3].

One result that is common to all our estimations is the key importance of a common global factor—the US current account. In the SUR model, the current account/GDP surpluses of China and Germany are found to be moving in tandem with the US current account/GDP deficits, with a coefficient that is close to one. This implies that a rise in US current account/GDP deficit by 1% is associated with an equal rise of the current account/GDP surpluses of China and Germany. The

Table 3 Impact of common factors on current account/GDP

VARIABLES	Current account/GDP of China (in%)	Current account/GDP of Germany (in%)
Lagged US current account/GDP	−0.96*** (0.21)	−0.96** (0.14)
Lagged own growth rate	0.05 (0.04)	−0.04 (0.04)
Lagged world growth rate	0.01 (0.07)	0.20*** (0.08)
Constant	−0.60 (0.83)	−1.64*** (0.59)
Observations	38	38
R-Squared	0.41	0.60

The dependent variable is current account balance scaled by GDP of China and Germany respectively. The table shows time-series estimation results from a seemingly unrelated regression model over the period from 1970 to 2009, using lagged, annual values of all explanatory variables. Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively

growth rate of the global GDP seems to be playing an important role for Germany, but not for China. These results are in line with the key role of the US as the demander of last resort during our sample period.⁶

2 Future Trends: Discussion

The dominance of the US as the spender or demander of last resort before the crisis, and the importance of the global growth rate in accounting for the surpluses of Germany hints at the limited viability of large future current account surpluses of China and Germany. This may especially be the case if the drop in US current account deficit/GDP ratio endures beyond the crisis period. In the global equilibrium, the sum of all current accounts should add up (up to statistical discrepancy) to zero. Hence, focusing on the creditors as the source of the challenges facing the global economy overlooks the contribution of the US itself to global imbalances. Similarly, focusing only on the debtor(s) would overlook the need for all parties to move from the pre-crisis state of affairs to the post-crisis one.

There are reasons to expect that the pre-crisis trends may be unsustainable. To recall, in 2000–2007, the US current account deficit/GDP was about 4–5%, funded partially by Chinese surpluses of about 8–10%, and significant current account surpluses of oil exporters, and few other countries. Looking forward, demographic factors are likely to impose important balancing effects on future current account trends.

Figures 6 and 7 suggests that future demographic transitions would work towards narrowing the surpluses on China and Germany. During the next 30 years, the dependency rate of the old (the ratio of population aged 65 years and older to the working age population aged 15–64 years) in Germany and China would increase dramatically relative to the US. The dependency ratio of the old in the German and Chinese population is projected to increase during 2010–2035 by about 24% and 19%, respectively, whereas that of the US would increase by 14%. The dependency ratio of the young (the ratio of population aged 65 years and older to the working age population, aged 15–64) in Germany is projected to increase by 2%, whereas that of the US and China are predicted to go down by 4% and 2%, respectively. These trends may work towards mitigating the surpluses of China and Germany. Table 4 summarizes the projected changes in the dependency rates, and their projected marginal contributions, applying the regression results of Gruber and Kamin (2007). The demographic transitions of China and Germany in the next 25 years are projected to reduce their current account/GDP by about 2.5% and 3.5%, respectively. This effect is stronger for Germany, reflecting the greater increase in the old dependency rate in Germany. These adjustments tend to be front-loaded, as the old dependency ratio curves in Figure 7 follow logistic patterns, and hence this process is likely to kick-in early on. The demographic transition in the US is

⁶ The limited number of observations (not more than 38) forced us to add sequentially the other conditioning variables (see Tables 1 and 2). Adding the extra conditioning variables does not change the main results described above. Due to limited degrees of freedom, we do not focus on the signs and the significance of the other conditioning variables.

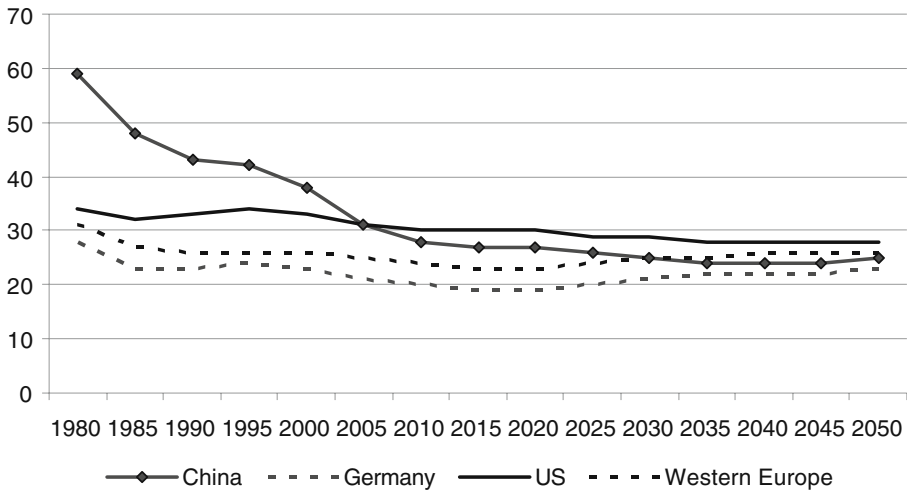


Fig. 6 Projections of dependency ratios (Young)

projected to increase US current account deficit/GDP by 2%. Consequently, the projected demographic transitions in China and Germany would reduce their current account surpluses, mitigating their contribution to global imbalances. In contrast, the projected demographic transition in the US would increase US current account deficit, suggesting that demographics would not mitigate the need of the US to increase its net savings.

While projecting future GDP growth rates may be subject to larger standard errors than projecting demographic trends, most observers expect the growth rates of China and other emerging markets to exceed that of the US and the OECD countries by a large margin. This trend has important repercussions on the future global imbalances, and the current accounts of China and Germany. A small country

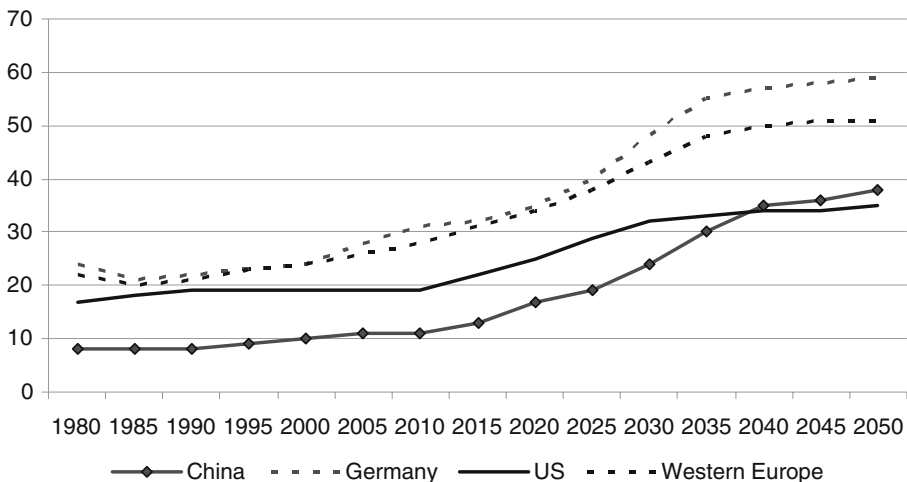


Fig. 7 Projections of dependency ratios (Old)

Table 4 Predicted impact of demographic changes on current account/GDP between 2010 and 2035

Countries	Projected Change in Dependency Ratio (Young)	Predicted marginal impact on the Current Account/GDP	Projected Change in Dependency Ratio (Old)	Predicted marginal impact on the Current Account/GDP	Predicted total marginal impact on the Current Account/GDP
China	-0.04	0.001	0.19	-0.026	-0.024
Germany	0.02	-0.001	0.24	-0.032	-0.033
USA	-0.02	0.001	0.14	-0.019	-0.018

The projected changes in dependency ratios (young and old) are from the United Nations World Population Database. The predicted marginal impact on the current account/GDP for each country is based on Gruber and Kamin (2007), regression (1) in Table 2. They found that the marginal effects of young and old dependency ratios are -0.03 and -0.13 , respectively. To illustrate, an increase of the old dependency ratio by 0.24 is projected to change the current account by $-0.13 \times 0.24 = -0.032$, reducing surpluses (or increasing deficit) by about 3% of the GDP

embarking on an export led growth, like China in the 1970s, can sustain it without imposing negative ripple effects as long as its relative size remains small. However, the long run success of the Chinese growth strategy may put in motion forces that may curtail the sustainability of a high GDP growth rate and a large current account surplus path. By now, China has reached a critical mass of “an elephant running in a China store.” The continuation of the fast growth rate of China, while maintaining large current account surplus/GDP, would be conditional on the sustainability of larger current account deficit/GDP of countries that grow at a much slower rate. This can be illustrated by investigating the size distribution and the durability of current account deficits, and by a simulation that relies on the adding-up property of current account balances, which, up to statistical discrepancies, should sum-up to zero.

Aizenman and Sun (2010) found that, with the exception of the US, the duration of spells of current account deficits during the decades prior to the 2008–09 global crisis depended negatively on the relative size of a country, as measured by its GDP/World GDP. The continuation of the pre-crisis path of the Chinese GDP growth rate, exceeding 10% a year while sustaining a current account/GDP ratio of 10% would require overtime, large increases in the current account/GDP ratios of large players, like the US. Short of the emergence of a new demander of last resort, one may reasonably expect the unwinding of global imbalances in the coming years. This follows the observation that the US is already facing deleveraging “stabilization blues.” The housing market weaknesses and the resultant private sector deleveraging point to probable reduction of consumption and increase in saving, thereby curtailing US current account deficits [see Glick and Lansing (2009)]. Similarly, the Greek crisis has put in motion forces reinforcing belt-tightening in Southern Europe. Coupled with this, the differential attitude towards fiscal policy of the core of Western Europe, i.e. of France and Germany, suggests that Europe may not be eager to replace the old role of the US as the global demander of last resort. EU’s tendency to run on average, balanced current accounts remains an issue that deserves further exploration. Arguably, this may reflect the greater political bargaining clout of labor in Europe relative to the US. In circumstances when current account deficits are

driven by balance of trade deficits, labor may oppose larger deficits to mitigate downwards wage pressure.⁷

The unwinding of global imbalances may be facilitated by a gradual shift of China from export led growth, towards a balanced growth of internal demand, a strategy that may be consistent with the continuation of Chinese employment and GDP growth [see Feenstra and Hong (2010)]. In addition to this, the continued rise in global GDP share of emerging markets may provide a further impetus for Asian countries to switch towards heavier reliance on policies boosting domestic demand. This in turn suggests the presence of market forces that may induce China and other emerging markets to scale down their current account surpluses over time. Thus, we may expect that short of the emergence of a “new demander of last resort” replacing the US, the Chinese growth path would be challenged by the limited appetite for prolonged current account deficits of most countries, and Europe would continue running close to balanced current accounts.

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⁷ Verifying this argument needs further research. To recall, an accounting tautology indicates that the current account surplus is saving minus investment, and is also equal to the value of goods produced by domestic residents, including net factor income and net transfers from abroad less the expenditure of domestic residents on goods. This implies that, on average, large current account deficits are associated with aggregate demand of domestic residents that exceeds their aggregate supply, a gap that is funded by net borrowing. The data indicates that the average saving/GDP in recent decades differs sharply between the US and the EU, while the patterns of investment/GDP are similar. During 2000–2007, the average investment rates of the EU and the US were about 20% of GDP (20.5% and 19.7%, respectively), yet the gross saving rate of the EU exceeded that of the US by a wide margin (19.71% versus 15.4% of GDP). Similar patterns apply for 1980–2007 [investment rates of the EU and the US were 21.2% and 19.6%, respectively, whereas the gross saving rates were 19.6% and 16.7%, respectively]. Some of these differences may be attributed to the deeper safety net of Europe, financed by much higher consumption taxes in Europe than in the US [see Lindert (2003) for insightful overview of the taxation and safety net differences between the EU and the US, summarizing his two books on this topic], and the under-taxation in the US relative to the size of US government demand and its transfers. Underpinning the political economy factors that may account for these differences remains an open research agenda.

Appendix

Table 5 Data description

Variables	Data sources
Current account, nominal GDP, net foreign assets, government budget balance	World Economic Outlook (WEO)
Age dependency ratio, young (the ratio of the population ages 0–14 to the working age population, ages 15–64)	World Development Indicators (WDI)
Age dependency ratio, old (the ratio of the population 65 and older to the working age population, ages 15–64)	World Development Indicators (WDI)
Domestic credit to private sector (% of GDP)	World Development Indicators (WDI)
Trade openness (sum of exports and imports divided by GDP)	Direction of Trade Statistics (DOT)
Projections of dependency ratios (young and old)	United Nations World Population Database
World growth rate, Own growth rate	World Economic Outlook (WEO)

References

- Aizenman J, Jinjarak Y (2009) Current account patterns and national real estate markets. *J Urban Econ* 66 (2):75–89
- Aizenman J, Sun Y (2010) Globalization and the sustainability of large current account imbalances: size matters. *J Macroecon* 32(1):35–44
- Bordo M, Wheelock D (2004) Monetary policy and asset prices: a look back at past U. S. stock market booms. Federal Reserve bank of St. Louis. Review 86:19–44
- Chamon M, Liu K, Prasad ES (2010). Income uncertainty and household savings in China. NBER Working Paper #16565
- Chinn DM, Prasad ES (2003) Medium-term determinants of current accounts in industrial and developing countries: an empirical exploration. *J Int Econ* 59(1):47–76
- Dellas H, Tavlas GS (2010) The fatal flaw: the revived Bretton-Woods system, liquidity creation, and commodity-price bubbles. Manuscript, the Bank of Greece
- Dooley MP, Folkerts-Landau D, Garber P (2003) An essay on the revived bretton woods system. NBER Working Paper no. 9971
- Feenstra CR, Hong C (2010) Chinese Exports and Employment. In: Feenstra CR, Wei SJ (eds) Chapter 5 in China's growing role in world trade. University of Chicago, Chicago
- Glick R, Lansing KJ (2009) U.S. household deleveraging and future consumption growth. FRBSF Economic Letter 2009–16
- Giaavazzi F, Spaventa L (2010) Why the current account matters in a monetary union Lessons from the financial crisis in the Euro area. manuscript, Bocconi University
- Gruber JW, Kamin SB (2007) Explaining the global pattern of current account imbalances. *J Int Money Finance* 26(4):500–522
- Lindert PH (2003) Why the welfare state looks like a free lunch. NBER Working Paper # 9869
- Obstfeld M, Rogoff K (1996) Foundations of International Economics, MIT Press
- Prasad ES, Rajan R, Subramanian A (2006) Foreign capital and economic growth. Paper presented at Federal Reserve Bank of Kansas City Annual Economic Symposium